THE PLANT DISEASE REPORTER

Issued By

The Plant Disease Survey

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BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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THE PLANT DISEASE SURVEY

Vol. VIII June 15, 1923 Number 1

THE SEASON

The unusual weather conditions that have prevailed this season deserve especial mention in any report of the plant disease situation. In general it has been unusually cold in states east of the Rocky Mountains and unusually wet for the most part east of the Mississippi River. On the other hand, west of the Rockies, drouth and hot weather have prevailed.

Here in the District of Columbia it has been unusually wet and cold with vegetation from two to three weeks later than usual. It has rained twenty-six days out of the past forty-two and at the present writing (June 11) it is still raining. During May an excess precipitation of approximately 3 inches fell and since the first of January we have accumulated an excess of 6.72 inches. The mean temperature for May was 60° or 3.7° below normal.

In the Pacific coast states and also in Idaho, Nevada, and Utah, however, exactly the opposite conditions to those in the District of Columbia have prevailed, with drouth and hot weather causing much deterioration of many crops. For instance, from California the report comes that pastures and ranges are drying up and small grains are poor with much being cut for hay. The May Supplement of Crops and Markets shows an abandonment of 54% of the winter wheat acreage in California. From Oregon it is reported that dry weather has reduced the wheat prospects in the largest wheat producing county of the state by about one-third, and in Washington, Idaho, Nevada, and Utah the drouth is serious.

The cold wet weather east of the Mississippi River has greatly interfered with farm work and the development of crops, spring planting being greatly delayed in many places. In some of the North Central States also, frost during the latter part of May injured early vegetable crops.

These unusual conditions mentioned above, especially the excess rainfall in the East, are bound to affect profoundly the plant diseases of the year. Already an epiphytotic of sycamore blight (Gnomonia veneta) has appeared and apple leafspot (Physalospora) is unusually abundant in some sections. On the other hand certain other diseases are being delayed in their appearance and may prove much less conspicuous than usual. It is hoped that all readers of this "Reporter" will take note of these fluctuations in the abundance and distribution of plant diseases and will send their reports to the Plant Disease Survey, thereby assisting in determining more definitely the relation of various weather conditions to disease development.

Puccinia graminis on barberry

In spite of the backward season, the cluster-cup stage of grain rust seems to be appearing in Wisconsin and Illinois about on time. From Wisconsin R. E. Vaughan writes

> "Cluster-cup stage on barberry was noted April 29 at Black Earth. It was somewhat more advanced than at the same time in 1923."

In Illinois, L. R. Tehon reports that G. C. Curran collected aecia on barberry, May 1, in Montgomery County, which lies near the middle of the state. On May 9 the barberries in Lake County were not affected. On May 20 four infected barberry leaves showing young cluster-cups were found after two hours' search in an area of escaped barberries at Lacon, Marshall County, Illinois.

REPORTS WANTED ON LEAF RUST OF WHEAT

How prevalent is leaf rust of wheat this season? Readers of these notes are asked to send reports to the Plant Disease Survey. B. B. Higgins, of Experiment, Georgia, writes that the rust is not nearly so abundant as last year in his state.

Observations on the fall crop are of interest. On November 15, 1923, L. R. Tehon sent in the following information from Illinois:

"Near Oblong, in Crawford County, 90% of the plants of September 19 sowing, varieties Illini Chief, Trumbull, and Fulcaster, were infected on November 13. Pustule involvement runs from 2 to 50% with an average near 20%. Plants of the same varieties from sowings made October 6 and 13 show only slight traces of rust.

"Fulcaster wheat near Carbondale showed only traces of rust on November 1, regardless of date of sowing."

WHEAT NEMATODE FOUND IN SOUTH CAROLINA

The wheat nematode, Tylenchus tritici, has recently been found for the first time in South Carolina, where it occurs in Oconee County in considerable quantities. The infestation was discovered through a farmer sending in samples of diseased Blue Straw wheat plants to the South Carolina Experiment Station. C. A. Ludwig from Clemson College, South Carolina, and G. H. Martin of the Plant Disease Survey, made a preliminary examination of fields in the vicinity of the infested farm on April 26, with the result that the disease was found on three other farms in the neighborhood, making four infested properties altogether. In one small wheat field, 80% of the plants were infected with the nema. In another one-half acre, 50 to 75% infection occurred. On a third farm, 1 1/2 percent of the plants were diseased, and on the fourth property, only a trace was observed. Messrs. Ludwig and Martin concluded that the nema has been in this section for some time, at least four to five years, and that seed exchanges and threshing outfits are the main means of spread.

FLAG SMUT OF WHEAT

Last year flag smut of wheat (Urocystis tritici) was found in one additional state, Kansas, and in nine new counties in the states of Illinois and Missouri. The work in Illinois was done by the State Department of Agriculture, and that in the other states by the Plant Disease Survey cooperating with the Office of Cereal Investigations and the state authorities.

This year no special survey is being made except in Illinois, by the State Department. P. A. Glenn reports that this year in Madison County, where the disease was originally discovered, they are not observing so much, but in St. Clair County to the south a field was found with from 10 to 50% infection. One new county, namely Washington County, has been added to the list of those where the disease occurs. A single field, about 30 miles from the nearest infestation, was found about May 29 in this county.

THE ALFALFA NEMATODE SITUATION

In 1922 the alfalfa nematode as described in U. S. Dept. Agr. Dept. Circ. 297, was known to occur only in three or four fields in Hermiston, Oregon. In 1923, however, it was found in the Yakima Valley of Washington, near Watsonville, California, and in Fremont and Huerfano Counties, Colorado.

This year a great many complaints are coming in to the Colorado Experiment Station of dying of alfalfa. Seven counties have reported difficulty. Some fields will have to be plowed up. Whether or not this dying out of the plants is due entirely to alfalfa nematode is questionable, and efforts are now being

made to determine the exact cause of the trouble, and to learn the distribution and losses. This Office is cooperating with the Colorado Station in a field survey of the irrigated alfalfa section.

POWDERY MILDEW OF RED CLOVER

Early in May requests were sent to 58 institutions, in states east of the Rocky Mountains, having mycological herbaria. The persons addressed were asked to examine their collections and determine whether or not they had any species of Trifolium showing the perfect stage of a powdery mildew. If so they were asked to furnish the information concerning the specimens.

Forty-two, or 72%, replies were received, and of these only 11 reported specimens showing perithecia, and these all came from states west of the Rockies, with the exception of some from Europe. Practically all of these were in exsiccati, and therefore the same collections were reported from several different institutions. Table No. 1 on the next page gives further details.

Only two states have reported the appearance of the conidial stage to date, namely, Louisiana, where it was first seen May 9, and South Carolina, where C. A. Ludwig collected a specimen May 16. C. W. Edgerton in Louisiana says that it was slow in starting this year. In 1922 he reported the first appearance April 10, and in 1923 in April also. Last year Ludwig reported the disease from Clemson College May 30.

Readers of this note are asked to keep watch for the first appearance of powdery mildew on clover and to report the same, together with notes concerning abundance, promptly to the Survey Office.

APPLE SCAB

The frequent rains of April and May have undoubtedly favored apple scab. It has been noted in abundance in orchards in some Maryland counties adjacent to the District of Columbia. Two collaborators' reports have been received as follows:

Pennsylvania: I may report at this time that apple scab will undoubtedly be very severe in Pennsylvania this year. The weather conditions having been unusually favorable for the development of the disease. Our first report came on May 15 from Adams County and immediately following that date from Cumberland, Dauphin and Franklin Counties. The first scab here in Center County was found Sunday May 25. (Thurston, May 27)

Wisconsin: Mature asci of apple scab fungus were found in our orchard, Madison, March 14. They were very scarce at this time. On April 4 mature asci were quite plentiful. The first apple scab infection on leaves was noted May 15 on Virginia crab. This was the day previous to the commencement of application of the regular pink spray in our orchard. (Vaughan, May 22)

Table 1. Specimens showing perithecia of powdery mildew on Trifolium spp. on file in various herbaria in Eastern United States. (preliminary list.)

HOST Fungus Locality, date, and collector	Collection	Reporter and herbarium
T. ALPESTRIS		
Erysiphe martii		
Wilmersdorf, Berlin, September, 1896 T. Lydow	---	W. H. Martin, New Jersey Agr. Exp. Sta.
Bohemia, 1872, de Thumen	---	W. H. Martin, New Jersey Agr. Exp. Sta.
T. INVOLUCRATUM		
E. communis		
Colorado, July 25, 1888 Rev. C. H. Demetrio	North American Fungi 2112	P. J. Anderson, Massachusetts Agr. Coll. E. A. Bessey, Michigan Agr. Coll.
E. polygoni		
Andrews, Oregon, August 1901 Griffiths & Morris	West American Fungi 168	V. K. Charles, Pathological Collections P. J. Anderson, Massachusetts Agr. Coll. J. C. Gilman, Iowa Agr. Exp. Sta. R. J. Pool, University of Nebraska W. H. Martin, New Jersey Agr. Exp. Sta.
T. LATIFOLIUM		
E. polygoni		
Warrens, Idaho	---	V. K. Charles, Pathological Collections
T. MEDIUM		
E. martii		
Saxony, October 1892, September 1890 W. Krieger	---	W. H. Martin, New Jersey Agr. Exp. Sta.
Wilmersdorf, Berlin, September 1896 T. Lydow	---	W. H. Martin, New Jersey Agr. Exp. Sta.
E. pisi		
---	Mycotheca Germanica 576	R. P. White, Kansas State Agr. Coll.

HOST Fungus Locality, date and collector	Collection	Reporter and herbarium
T. PRATENSE		
E. communis		
North Yakima, Washington	---	V. K. Charles, Pathological Collections
E. polygoni		
Caldwell, Idaho, September 30, 1912	Fungi Columbiana	V. K. Charles, Pathological Collections
E. E. Bartholomew	4021	W. E. Maneval, University of Missouri
		P. J. Anderson, Massachusetts Agr. Coll.
		G. F. Weber, Florida Agr. Exp. Sta.
		R. J. Pool, University of Nebraska
		Donald Folsom, Maine Agr. Exp. Sta.
		N. J. Giddings, West Virginia State University College of Agriculture
Delta, Colorado, October 8, 1912	Fungi Columbiana	Same as preceding, and
E. E. Bartholomew	4121	H. C. Young, Ohio Agr. Exp. Sta.
T. RYDBERGII		
E. polygoni		
Grizzly Creek, Laramie County, Colorado	No. 1873	W. Weniger, North Dakota Agr. Coll.
August 12, 1903, Leslie N. Goodding		
T. VARIEGATUM		
E. polygoni		
Lolo, Montana, September 1898	West American	V. K. Charles, Pathological Collections
Williams & Griffiths	Fungi 134	P. J. Anderson, Massachusetts Agr. Col.
		J. C. Gilman, Iowa Agr. Exp. Sta.
		R. J. Pool, University of Nebraska
		W. H. Martin, New Jersey Agr. Exp. Sta.
TRIFOLIUM SPP.		
E. polygoni		
Little Valley, Washoe County, Nevada	Plants of Nevada	J. C. Gilman, Iowa Agr. Exp. Sta.
August 14, 1902; C. F. Baker	1469	
Washington (presented by F. D. Heald)	---	W. H. Martin, New Jersey Agr. Exp. Sta.
Grizzly Creek, Laramie County, Colorado	No. 1873	W. Weniger, North Dakota Agr. Coll.
August 12, 1903, Leslie N. Goodding		

EPIPHYTOTIC OF FIRE BLIGHT IN MISSOURI

That fire blight is serious in parts of Missouri and Illinois is shown by the accompanying reports. This Office would like to know how much blossom and twig blight is showing up this season in the various states.

Missouri: Fire-blight of apple is more prevalent and severe in Missouri this year than it has been for several years. I have received reports from several station workers and also a few specimens of the disease have been sent in. The disease is apparently general in distribution and occurs as a blossom blight. One of the station men stated that in Jasper County probably fifty percent of the apples would be destroyed on account of this disease. The last infection that was anywhere near as severe as the present one occurred in 1913. We have had a late spring, the weather during May has been unusually cold and rainy. This may account in part for this unusual outbreak of fire blight. (Maneval, May 30)

Illinois: According to S. C. Chandler of the Natural History Survey, blight appeared on apples, especially Transparents, in Union and Jackson Counties, May 15. The blight was causing serious loss to all fruit in the week previous to May 19 and some growers say that most of the crop was lost. (Tehon, May 23)

BLACK ROT LEAFSPOT

In Maryland and Delaware, at least, the black rot leafspot of apples, frogeye, (Physalospora) is unusually abundant this year. Many trees will undoubtedly lose a large proportion of their leaves on account of this spot. Infection apparently occurred soon after the time for the pink-bud spray, or at about the time the apples were in blossom. The following report by R. A. Jehle, of Maryland, dated May 26, is of interest:

"Apple leaf spot is present in practically all Maryland orchards. The disease was checked by a thorough application of concentrated lime sulfur solution 1-40 during the pink-bud stage. In an orchard in Worcester County, one in Caroline County and one in Charles County, a portion of the orchard was not sprayed during the pink-bud stage. In all of the unsprayed trees in these orchards there was a severe infestation of leaf spot which will result in a loss of from 20 to 50% of the leaves. In the same orchards where the pink-bud spray was applied there was very little leaf spot and there will be little or no defoliation."

APPLE POWDERY MILDEW IN THE SOUTHWEST

Reports of powdery mildew on apples have been received this year both from Arizona and New Mexico. Since these states do not usually report much of this disease, one might suspect that it was especially common this season.

New Mexico: We have also had considerable numbers of reports on powdery mildew of apples. (Crawford, June 3)

Arizona: During the past month several reports have been received, which indicate considerable trouble from the disease. (Brown, May 29)

PEACH LEAF CURL

An abundance of leaf curl was noted on unsprayed trees or portions of trees, during the course of a recent trip in Delaware. Defoliation of these trees will be heavy, on account of the severity of infection.

In a recent letter from A. J. Mix, of Lawrence, Kansas, he states that there is almost no curl in the vicinity of Lawrence. Since peach orchards are not sprayed there, he usually has no difficulty in finding curl, but this year only a few infected leaves on one tree were found. He writes further that:

> "There was almost no rain during the period that the buds are supposed to be susceptible, only one or two showers of a couple hours' duration. I think that is the explanation. We had some unusually cold weather this winter, and it is, of course, conceivable that the spores did not withstand freezing. I think the failure to secure infection from artificial inoculations, however, points to the other possibility."

WINTER INJURY TO PEACH TREES

Here are two reports on the killing of peach buds and trees by low temperatures. Information concerning this injury in other states is wanted.

Georgia: Peach trees were severely injured throughout Middle Georgia by the January freezes. In some three and four year old orchards approximately ninety percent were injured and fifty percent of the trees will die before the end of summer. In spite of the freeze, a good crop of fruit has set. (Higgins, May 19)

Illinois: Peaches (fruit buds) are probably killed as far north as Carbondale. In Union, Pulaski, and Johnson Counties, the temperature was around 9° and it is probable that about 40 percent of the peaches are alive in most localities in this section. An examination of several thousand peach buds at Urbana showed 100 percent killed and similar results were obtained at Collinsville where the temperature was 11°. (Anderson, March 26)

APOTHECIA OF BROWN ROT FUNGUS

Wisconsin: Apothecia of the plum brown rot fungus Sclerotinia cinerea were found in our orchard, Madison, on May 6. They were very abundant under trees which had considerable brown

rot mummies from last season. There were no apothecia visible on May 3. On the night of May 4 and May 5 there was considerable precipitation which probably accounts for the coming out of this fungus on May 6. (Vaughan, May 22)

COTTON SORESHIN TROUBLESOME IN NEW MEXICO

"We have been having a great deal of trouble with the so-called soreshin (Rhizoctonia) of young cotton plants this spring. This trouble appears to be more severe in fields where the cotton has been heavily irrigated. The season has been unusually cool and no doubt this has had something to do with the presence of the disease." (Crawford, June 3)

FLORIDA CELERY DISEASES

The following report on the celery diseases that occurred in the Sanford section of Florida, during the season of 1923 and 1924, which closed in April, has been received from A. C. Foster under date of April 15. Mr. Foster was located at Sanford during the entire season, and was working on celery diseases.

Early Blight, Cercospora apii. General infection of the plants in the seed beds and early settings, but apparently not as general as last season. After December, and several appearances of rather continued cool weather the early blight disappeared and was not conspicuously present during the remainder of the growing season for celery until May. This is apparently a very striking case of the control of early blight by abnormally low temperatures during the winter months.

Late Blight, Septoria apii. Appeared first in December and January, and became very destructive and widespread during March and April. Apparently more difficult to control than early blight and considerable loss has resulted from its attack. The frequent cool spells during January, February, and March, with temperatures often going as low as 38 and 40, evidently produced favorable conditions for its growth and spread. Most of the infestations are introduced on seed grown in New Jersey. Late blight was decidedly more destructive than early blight in this section, which is of rare occurrence.

Blackheart, Physiological. Appeared rather generally throughout the section but not in its destructive form as last season. Unbalanced water relations is apparently as much or possibly more a factor in producing the disease than abnormally high temperatures as has been the opinion heretofore. The two abnormal conditions working together, do however produce favorable conditions for blackheart development.

Pink Rot, Limb Rot, Foot Rot; Sclerotinia libertinia. This disease has probably ranked first in damage to celery in this section this season; it being widespread in its appearance over the entire section, and appeared in December, a month earlier than usual. In several instances the losses ran as high as 60 percent of the crop, but in most cases the losses

would probably be less than 2 percent. This disease also causes considerable decay in transit, and its severity in the fields has been reflected in the reports from the Market Inspectors from the place of consignment. The unusual severity of this disease is another instance of the favorable conditions produced as a result of the abnormally low temperatures during the three winter months.

Root-Knot, Heterodera radicicola. Not of very much importance this season except in the seed beds during late summer, and a few fields in the section. The continued cool weather checked the growth of the parasite, and late celery managed to escape its attack even though the organism was present in the soil. A few fields found where considerable damage was caused.

Hollow Stem and Pithiness, Cause Unknown. Considerable loss resulted from the presence of hollow stem and pithy stems in celery cut in December and April. No explanation can be offered as to the cause of the trouble, although it is not thought to be due to an inheritant character as has been reported in the literature. Seed from the same source will act different when grown by different growers. Unquestionably, the continued cool weather has been one of the factors in producing the malady, and there are probably several others that play a rather important part.

Stunting, Root-Knot and Poor Setting of Seedlings. Several workers have apparently confused the stunting and yellowing of celery plants resulting from poor setting and root-knot with the "celery yellows" but the three are distinctly and characteristically different. In this section where one setter will often set over 30,000 plants in one day he will necessarily improperly set many of them, failing to plant the roots properly in the soil and to properly pack them. This condition results in stunted plants, that often never grow to maturity. The growers in this section experience every year considerable losses as a result of this alone. Root-knot also causes stunting and yellowing but this is rarely confused with poor setting. This abnormal condition is quite generally prevalent in the Sanford and Bradentown sections.

Cracked Stems or Intumescences. Cracked stems and a tendency to break easily is very generally found in the Sanford section. No definite cause of the trouble is known but it is thought that excessive lime on the soil is associated with its appearance.

Brown Stems. Very often found and is rather prevalent in a few instances. The stems appear brown, the browning being apparently below the epidermis. In advanced stages slime rot appears but is probably secondary. Cause not known.

Mosaic. Can be found in almost any field but is rarely ever of any importance.

Red Root. Quite generally present both in seed beds and fields, but probably is of little consequence except in cases where the injury is severe. Attributed to several causes, the most common being root injury due to excessive fertilizer. Extremely acid soils will also cause red root.

PEA DISEASES

The following is a list of fungous and bacterial parasites of the common pea, together with their distribution, as shown by survey records and herbarium specimens in the Bureau of Plant Industry.

Parasitic organisms occurring on the common pea (Pisum sativum L.) in the United States

(*indicates specimen in Pathological Collections)

(Ascochyta pisi Lib.)
=Mycosphaerella pinodes (B. & B.) Stone

Bacterium sp.
New York

Bacterium lathyri Manns & Taub.
Delaware

Bacterium pisi Sackett
Colorado, Indiana, Michigan, Montana, North Dakota, Oregon, Pennsylvania.

Botrytis vulgaris Fr.
*Alaska.

Cercospora pisi-sativae Stevenson
Porto Rico.

Colletotrichum pisi Pat.
Wisconsin.

Cuscuta sp.
Missouri.

(Erysiphe communis Grev.)
=Erysiphe polygoni DC.

Erysiphe polygoni DC.
Alabama, Arkansas, California, *Colorado, Connecticut, *District of Columbia, Florida, Georgia, Idaho, *Illinois, Iowa, Louisiana, *Maine, Maryland,* Massachusetts, *Michigan, Minnesota, *Mississippi, *Montana, *Nebraska, New Hampshire, New Jersey, *New York, North Carolina, *North Dakota, Ohio, Oklahoma, Oregon, *Pennsylvania, South Carolina, Texas, Utah, Virginia, *Washington, West Virginia, *Wisconsin.

Fusarium sp.
Alabama, California, Colorado, Connecticut, Delaware, Georgia, *Illinois, Indiana, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, *New Jersey, New York, Ohio, Oregon, (?), Pennsylvania, South Carolina, Utah, Virginia, West Virginia, (?), Wisconsin.

Fusicladium brevipus E. & E. & Phyllosticta sp.
*Utah.

Heterodera radicicola (Greef.) Müll.
California, Florida, North Carolina, South Carolina, Texas.

Isariopsis griseola Sacc.
*Rhode Island.

Mycosphaerella pinodes (B. & B.) Stone
*Alabama, Arkansas, California, Connecticut, Delaware, Georgia, Indiana, Iowa, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, *Mississippi, Montana, *Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, *Pennsylvania, South Carolina, Texas, Vermont, *Virginia, Washington, Wisconsin.

Ozonium omnivorum Shear
*Texas.

Peronospora viciae (Berk.) DBy.
California, Delaware, Kansas, Maryland, NewYork, Oregon, Pennsylvania, Tennessee, Wisconsin.

Phytophthora sp.
California.

Phytophthora cactorum (Cohn & Leb.) Schr.
Connecticut.

Phytophthora terrestris Sherb.
Porto Rico

Pythium sp.
Connecticut, Delaware, Illinois, Michigan, Montana, Wisconsin.

Pythium de Baryanum Hesse
Connecticut, Delaware, Wisconsin.

Rhizoctonia sp.
California, Colorado (?), Florida, Massachusetts, Michigan, Minnesota, *New Jersey, New York, North Carolina, Pennsylvania, Utah, Washington.

Sclerotinia libertiana Fckl.
Delaware, Florida, Pennsylvania.

(Septoria leguminum Desm.)
=Septoria pisi West.

Septoria pisi West
California, Colorado, *Delaware, Indiana, Maine, Maryland, *Michigan, Minnesota, Montana, New Jersey, *New York, *North Dakota, Ohio, Pennsylvania, Texas, Wisconsin.

Thielavia basicola (B. & Br.) Zopf.
Arkansas, Connecticut, Maryland, New York, Pennsylvania.

Uromyces fabae (Pers.) D By
Minnesota.

Uromyces pisi (Pers.) Wint.
Nebraska, North Dakota.

Undetermined
Bacterial blight
Delaware, Illinois, Indiana, Michigan, Minnesota, Mississippi, Montana, North Dakota, Washington, Wisconsin.

Blasting
Michigan.

Mosaic
California.

White pot spot
Washington.

This year we wish to obtain a better knowledge of the exact identity and distribution of these various troubles. We have an especially good opportunity to clarify the situation with regard to the various bacterial diseases, as Miss Helen E. Fox, of the Laboratory of Plant Pathology has consented to make a critical examination of all material sent in and to furnish a report of the same. She is particularly interested in obtaining fresh specimens from all parts of the United States of a bacterial disease that exhibits the following symptoms:

"This disease takes the form of a leafspot, a stem rot, and a pod rot. The symptoms are very striking and easily recognized in the field. On the leaves the spots appear first as pin-prick points which are dark green and watery in appearance. The leaves have the appearance of being bruised and the dark green spots turn to a

darker green which is nearly black. Because of their abnormal condition the leaves dry out and the centers of the dark green spots turn to a russet brown.

"On the stems the same coloring is present, the spots are more linear and often the whole stem is a mass of the dark green to almost black color while later on the smaller areas of russet brown appear.

"The mature pods when attacked by this disease first turn a darker green in color and have a watery appearance. Later they become brown and shriveled.

"Whenever pea vines have a bruised, dark green watery appearance this disease may be suspected. So far the disease has been reported from Georgia and from Michigan."

The pea rootrots probably offer the most important and also the most complicated of the pea disease problems. Encouraging progress is being made in the study of these rootrots by the Office of Cotton, Truck and Forage Crop Disease Investigations. They desire as much material as possible from various parts of the country, in order that associated organisms may be determined. Collaborators will be contributing greatly to the work by sending in specimens.

It is suggested that rootrot samples from east of the Mississippi and Ohio Rivers be sent to Dr. W. A. Orton, Bureau of Plant Industry, Washington, and that samples from west of those rivers go to Dr. F. R. Jones, Madison, Wisconsin. Suspected bacterial diseases should be sent to Miss Helen E. Fox, Bureau of Plant Industry, Washington, or to the Plant Disease Survey, and specimens and reports of other pea diseases had best be sent also to the Plant Disease Survey.

REPORTS ON PEA DISEASE

"I have just completed a tour of the southern section of the state, and have found that the sugar pea disease, is very severe in every field examined in that section. I have found but one field in this state that did not show the trouble, to a marked degree. I am not in a position to state just what the damage is, but it is safe to say that the loss has been well above 75%. The growers in this section are very much discouraged over the outlook for the future, and unless we can find some remedial measures, this crop will go out of existence with us." (W. D. Moore, May 9, South Carolina)

The trouble referred to above seems to be a combination of bacterial blight (Bacterium pisi) and rootrot, with possibly some other diseases involved. Isolations from numerous South Carolina specimens in the Laboratory of Plant Pathology, Bureau of Plant Industry, have shown that Bacterium pisi is responsible for much of the damage.

Specimens sent in from Florida, Maryland, Delaware, and New Jersey have also yielded this organism. Not much damage was reported in these states, however.

On a recent trip in some of the pea-canning sections of Maryland, New Jersey, and Delaware, Messrs. Drechsler and Haskell, in company with the collaborators of those states, found rootrot to be present in practically every field. In some fields nearly every plant was more or less affected, while in others it was necessary to search for some time before a diseased individual could be found. In these latter fields, where the disease was rare, it was usually noted that the land had not been planted to peas for several years. A number of instances showing the value of rotation in controlling rootrot, and also the disastrous effects of continual planting to peas, were seen.

Other troubles noted were bacterial blight (Bacterium pisi), leaf blight (Septoria pisi), a number of undetermined rootrots, and a disease resembling mosaic.

R. E. Vaughan, of Wisconsin, reports another disease, the leafspot caused by Ascochyta pisi, which occurred on Canadian field peas at Madison May 21. He states that it was evidently a case of seed infection, as no peas were grown on the plat last year.

SYCAMORE BLIGHT

An unusually heavy infection of sycamores with Gnomonia veneta seems to be occurring this year. It has been noted by the writer and collaborators in Maryland, Delaware and New Jersey. In the latter state it is widespread and very destructive to the young foliage. From Cincinnati, Ohio, O. T. Wilson writeson May 20 that the park sycamores are suffering from this disease, many trees being without a single healthy appearing leaf. He makes mention of the fact that the disease works with great rapidity

G. F. Gravatt of the Office of Forest Pathology submits the following note.

> "In Virginia, during the middle of May, the blight (Gnomonia veneta) was noted wherever native sycamores (Platanus occidentalis) were observed from Winchester to Roanoke and from Staunton to Charlottesville. In Maryland it was observed at different points immediately adjoining the District of Columbia and between Hagerstown and Rockville. Along the Pennsylvania railroad it was also noted from Washington, D. C. to York County, Pa.
>
> "In Pennsylvania it was prevalent through the central part of the state from Potter County south to York County. In Potter County, where the observations were made during the last week in May, the sycamores were just producing their first leaves and a very large percentage of these small leaves and growing shoots were attacked. The amount of disease varied greatly on the individual trees. Some had over 90 percent of the leaves and twigs killed while others had less than 10 percent.
>
> "In Washington, D. C., on the street sycamores, this disease is worse than usual but is not nearly so prevalent as on nearby native sycamores.
>
> "The blight is present in varying quantities practically every year and has for the past few years been a serious factor

affecting the vitality of sycamores. This year it is even worse than it has been for the past few years. The depletion of the vigor of the trees due to the killing of a large percentage of the leaves and twigs is becoming apparent. A number of trees were observed which had more than one-half of their limbs killed, apparently due to repeated attacks of this fungus."

The Department of Plant Pathology of the New Jersey Agricultural Experiment Station has just sent in the following:

"Nearly every sycamore tree in the state has been defoliated. The trouble was first observed on May 22 in Burlington County and since then has been reported from most counties in the state."

This fungus is evidently influenced very much by weather conditions. It would be very desirable to learn more exactly just what these conditions may be. With this in mind, all interested persons are asked to report to the Survey the extent of injury from the fungus, in order that the more exact geographic range and abundance may be determined.

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